markably pale. The uterus was very large, its serous surface pale and having a puffy appearance. The muscular tissue of the organ was pale but not softened, nor was there any pus in its substance. The ovaries were large, particularly the right, which contained beneath its surface and in its substance minute deposits of pus. No pus could be found in the veins of any part, nor any evidences of inflammation of these tubes.

PHILADELPHIA, *August 1st*, 1845.

ART. IV.—*Analysis of an "Official Report to the Surgeon-General, U. S. Army, on the use of large doses of Sulphate of Quinine in diseases of the South, with notices of the Climate and Diseases of Florida, &c. &c.*, by JOHN B. PORTER, M. D., Assistant Surgeon, U. S. Army."

THE report of Dr. Porter is one of a series of official reports which were elicited from the medical officers of the army by a circular issued from the office of the Surgeon-General in the month of August, 1843, with the object of collecting observations on the use of sulphate of quinine in large doses, which was known to be a common and increasing practice in Florida and the south-west, and a subject of much interest to the medical profession at large.

An estimate of the extent of Dr. Porter's experience in diseases of the south may be formed from his reply to the 1st question of the circular.

"In summing up my experience in the diseases of Florida, the number, character and variety of the cases during three summers' service at various points in the peninsula, from its commencement at Fort White in 1839, to its termination with the yellow fever at St. Augustine in 1841, are to be taken into consideration. I am unable to enter upon the statistics of my southern service, farther than to say that the whole number of cases treated by myself in Florida alone, is not much less than 2500. This includes unenlisted persons as well as soldiers of the army. Of this number, more than 1800 cases were of strictly climatic disease. The practice of giving large doses of quinine in fevers was fairly tried at Fort King in the summer of 1841; the number of cases at this post alone being sufficient to afford considerable experience in the treatment of disease, and the effects of remedial agents. From the month of March to the middle of August, when I left this post, 995 persons were taken sick, of which number no less than 946 were strictly climatic disease, and of these 687 were cases of fever. From the 20th of April, when the epidemic broke out, to the 10th of August, a period of four months, there were taken sick of enlisted and unenlisted persons 935, of which 886 were cases of climatic disease. Whole number of deaths four. Of these fatal cases, two were congestive fever; one of acute dysentery, brought in from the field after several days' continuance; and one, a mild remittent fever, was fatal from exposure to a heavy rain, whilst the patient was under the influence of mercury. But one of them was treated by large doses of quinine—a terrible case of congestive fever, brought to the hospital moribund. At this post there was a fair chance of testing the effects of quinine in large doses, which was not neglected; and I can confidently add the testimony of my experience to that of the able officers of the department who adopted this plan of practice with success."

Before entering upon a description of the diseases encountered in Florida, the geological character of the peninsula is discussed at length, together with the peculiarities of climate calculated to engender disease. A geological sketch of the territory by James Pierce, Esq., quoted from Silliman's Journal, is particularly apt and concise.

"A rolling tract of comparatively elevated ground, a continuation of Georgia and Alabama ridges, passes in an eastern direction through the centre and northern part of West Florida, thence bends to the south-east into East Florida, dividing the waters that fall into the St. John's and Gulf of Mexico, and terminating between the Bay of Espiritu Santo and Charlotte Harbour, and occupying in Florida an average of about 30 miles. This rolling district is principally of secondary formation. Numerous sinks, caves, and subterraneous water-courses peculiar to calcareous tracts, indicate a basis of limestone, and it is probable that this is the basis of most of the hilly districts of Florida.

"The savannas and prairies of the interior are grass-covered plains, without trees or shrubs, and in the rainy season often partially covered with water, but generally sufficiently dry and firm to support cattle. They often contain pools of water, and some of these basins were probably beds of lakes, and have been gradually filled up by clay, sand, and vegetable mould washed from the hills. The soil of the pine barrens, situated in the interior, is almost uniformly fine sand with a thin dressing of vegetable earth, and sufficiently compact for roads. In some places it rests on clay, but generally at a considerable depth.

"The seaboards and southern portion of East Florida are mostly alluvial. The north-eastern part of the peninsula, between the head waters of the St. Mary's, the river St. John and the ocean, varies little in surface, soil and vegetable productions, from the coast of Georgia, and is generally very level.

"Large swamps and hammocks, or dense groves, containing a variety of trees of annual and perennial verdure, are insulated in this generally pine barren region, ranging parallel with the ocean or bordering on streams. Some of the large hammocks are dry part of the year, and have a deep vegetable soil based on rich marl, but it is doubtful whether they can be cultivated, as in the rainy months of June, July and August, when crops are on the ground, the swamps are filled with water which falls in torrents, and slowly drains from the flat surface of the country."

The nature of the limestone formation gives rise to another phenomenon which is not uncommon in Florida. Considerable streams and lakes disappear subterraneously, leaving tracts of land before submerged to be acted upon by the sun's rays. This was the case with Lake Tuscawilla, near Micanopy, which suddenly disappeared in 1838, in the course of a single night; and Orange Lake has been running off in a similar manner for some years, leaving thousands of acres of drained land. Such phenomena must exercise a great influence on the salubrity of the surrounding country, especially when it is considered that what was once the bottom of a lake is annually saturated with water during the rainy season, and subsequently exposed to a high temperature. The numerous "*lime-sinks*" and "*bay-galls*" throughout the country exert a similar influence. As in all limestone and alluvial regions, the water is of bad quality. Dr. Rush says, "there can be no doubt of the predisposition to fevers being increased by the use of impure water." In many parts of the territory the beds of the rivers and springs are composed of stratified and porous limestone, and the water taken from them, after standing a few hours, deposits a copious limestone sediment. These streams are swollen to a great height by the rains, and become very low during the dry season; another fertile source of malaria.

The rainy season usually commences in May, and gradually terminates about the end of August or in the early part of September. The rains are not continuous; the frequent torrents during the day being quickly succeeded by a burning sun; for, during the whole season, the mean atmospheric temperature, as indicated by the thermometer, is not less than 80° on the sea-coast, as observed at St. Augustine and Tampa Bay; the mean summer heat of the former being 80·65, and of the latter 80·42. In the interior it is still hotter, the mean summer temperature being 82·35. For a long time after the cessation of the rains, or until the brief winter commences, there is great humidity of the atmosphere. From the extensive ponds, swamps, hammocks and savannas exposed to a high temperature, constant exhalations arise during the day, and are precipitated at night in heavy dews. Soon after sunset every one is sensible of the great dampness of the atmosphere, and at all seasons of the year it is sufficiently obvious to the senses that the air is more humid than in the more northern sections of our country. Even in winter the deposition of dew is very great. For six months in the year the lowest monthly mean temperature is 70° Fahr., and the highest 85°; a degree of heat, which, conjoined with the extreme humidity of the atmosphere, is highly favourable to the process of vegetable decomposition. Another source of disease in Florida is an uniformly high *dew-point.* Meteorological observations have not as yet furnished incontrovertible data to prove this assertion, yet the languor of the mind, the debility of the muscular system, the state of the skin, the general depression, and the close sultry weather which is always experienced to a greater or less degree during the hot season, afford ample evidence of the fact that with a high temperature there is also, in Florida, a high dew-point. The influence of this circumstance upon the system, and its agency in the production of febrile disease, are ably illustrated by the language of a recent writer (Dr. C. A. Lee).

> "The state of the dew-point exerts far greater influence upon animal bodies, especially in the production of disease, than temperature itself. This arises chiefly from the circumstances that a high state of the dew-point interrupts, to a greater or less extent, the healthy function of the skin and lungs—two of the most important organs of the body. I maintain that perfect decarbonization of the blood cannot take place in the lungs with a high dew-point, and consequently that the vital fluid cannot receive a sufficient quantity of oxygen to fit it for the various offices which it is designed to perform in the animal economy. An atmosphere with a high dew-point, moreover, rapidly caries off the vitreous electricity, which is doubtless intended to subserve an important end as a vital stimulus. We find, accordingly, that highly malignant fevers do not prevail where the dew-point is below 60°. The same is true of malaria. If we seek for the cause of the excessive fatality of tropical diseases, we shall find it in a dew-point of 70° or 80°. Evaporation from the surface of the body is either checked, or the 53 ounces of fluid given off from the skin every 24 hours, with a moderate dew-point, are disposed of through some different channel, constituting a material derangement of the animal economy. * * * * The daily *range* of the dew-point in the U. States is much greater than in Great Britain and the other European countries, and to this I attribute our greater liability to febrile disorders. At the island of St. Vincent we need seek no other cause for the extreme unhealthiness. On the table lands ol Columbia, under the equator, and in Mexico, the dew-point corresponds very nearly with that of our own latitude, as does also the mean annual temperature, and the inhabitants enjoy an equal degree of health. In Havana, Vera Cruz, and all other places where the yellow fever or other high grades of bilious fever are prevalent, the mean state of the dew-point is very high.
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> "A high dew-point not only gives efficiency to malaria by checking its elimination from the system, but it acts also by preventing the separation of carbon by pulmonary and cutaneous transpiration; hence the increased biliary secretion in hot climates."

With this combination of circumstances it is not difficult to account for the prevalence of malarial disease in Florida; a dead level and a half drained country alternately drenched with rains and broiled by an almost tropical sun—reeking with the steam from ten thousand swamps, lagoons, bogs and savannas—would furnish ample materials for vegetable decomposition and miasmatic effluvia.

But the decay of vegetable matter is not the only source of malaria. Dr. Heyne, of Madras, is of opinion that the geological nature of the soil is one of the most powerful causes of the "*hill fever*" of India, and that the ordinarily received opinions as to the vegetable or marshy origin of fevers will not here hold good. Dr. James Johnson has "ever considered the geological nature of the soil as one of the most powerful of the causes of physical climate." Even in countries as barren as the sands of Florida, miasmatic fevers, or at least fevers similar to those produced by miasma, have been exceedingly common. Sir Gilbert Blane describes the soil of

Walcheren as "consisting of fine white sand, known in the eastern counties of England by the name of '*silt*,' and about a third part of clay." It was after a hot and dry summer, also, that the British army suffered in that island from the endemic fever, to a degree almost unprecedented in the annals of warfare. "In August, 1794," says Dr. Ferguson, of the British army, "after a very hot and dry summer, our army in Holland encamped at Rosendal and Osterhout. The soil, in both places, was a level plain of sand, with perfectly dry surface, where no vegetation existed or could exist, but stunted heath plants. It was universally percolated to within a few inches of the surface with water, which, so far from being putrid was perfectly palatable. Here, fevers of the intermittent and remittent type appeared among the troops in great abundance." Dr. Watson, after quoting Dr. Ferguson as above, adds: "For producing malaria, it appears to be requisite that there should be a surface capable of absorbing moisture, and that this surface should be flooded and soaked with water and then dried; and the higher the temperature, and the quicker the drying process, the more plentiful and virulent is the poison that is evolved."

Dr. Lind also enumerates as one of the signs of an unhealthy country, "a sort of sandy soil, commonly a small, loose, white sand, such as that at Pensacola, Whydah and the island of Buonavista, which is found by experience to be injurious to health;" and Dr. Parsons remarks that Pensacola seems to be rendered unhealthy by its sandy and barren soil.

It was a matter of surprise to many that fevers were often prevalent in the barren and sandy portions of Florida during the existence of Indian hostilities; but the above facts, in connection with the geology of the territory, are abundantly sufficient to explain their cause.

Malaria is, then, the great primary and specific cause of most of the diseases of Florida. It may be introduced into the system through the respiratory passages—by absorption into the pulmonary circulation, or by means of its effects on the ganglial nerves of the lungs, through the fauces, the olfactories, the stomach and the cutaneous surface. Its action on the system is considered to be that of a *general sedative* and a *local irritant.* The earliest influence of the poison is sustained, most probably, by the nervous system; yet the connection of the latter with the vascular system is so intimate, that it must remain a matter of doubt, in the present state of our knowledge, which of the two receives the first impulse to morbid action.

In either case it is certain that a depression of the vital forces is the invariable result of exposure to the climate of Florida; hence the adynamic condition of system, the disposition to congestion of the head and abdominal viscera, and to general venous congestion, which characterize all cases of disease (except those occurring in healthy recruits, fresh from the north), and which could only be attributed to impaired energy of the brain and nervous system. In no form of disease is this depression of nervous energy more obvious than in congestive fever; and as all fevers of malarial origin, intermittent, remittent, and dysentery, partake more or less of this character, it follows, that the different grades of malarial disease, from the slight depression and congestion of a mild intermittent, to the overwhelming manifestation of disease in the most grave case of congestive fever, have certain symptoms in common, which vary in proportion to the intensity of the poison.

After a very short residence in Florida, the first announcement of the climatorial influence upon the system is a prodigious increase of perspiration, and at the same time an increased and vitiated secretion of bile, constituting the *cutaneo-hepatic sympathy* of Dr. James Johnson. The digestion is, at the same time, impaired; and the lungs are hindered in their function by the quantity of moisture in the air. The temper becomes irritable, and there are shooting pains in different parts of the body, often doubtful in their character even when experienced by a physician, whether they proceed from rheumatism, or neuralgia from the action of malaria, until a paroxysm of fever removes all uncertainty. The face becomes pallid and sodden, often communicating a greasy feel to the fingers. The circulation is languid, easily excited or thrown off its balance, and there is great tendency to venous congestion. The secretions (excepting the bile and perspiration), are all diminished; particularly the urine, which becomes scanty and high-coloured. Still later there is a sensation of weight or dragging in the region of the liver, often so great as to render it distressing to ride on horseback, or to walk at a rapid pace; caused, most probably, by engorgement of the portal circulation; and at the same time there is constipation. Then comes, many times in the course of a few hours, a great change in the urine, which is still less in quantity than before, and of a dark-red or brick dust colour; and when this appearance presents itself, an attack of fever is not far off; especially as there is frequently, at the same time, a cessation of the profuse perspiration.

"Many such cases," says Dr. Porter, "occurred within my observation in Florida, and I also experienced the same train of symptoms in my own person, previous to an attack of fever in 1839; having left the extreme north in June and plunged into the interior of the territory in July of the same year. And although many do not experience all of these symptoms, I am persuaded there are few cases of fever in which most of them do not previously make their appearance in a greater or less degree. The two main symptoms of approaching fever in an already disordered system are the sensations in the right hypochondrium, denoting an engorged condition of the liver, with derangement of its functions, and the change in the urine to a very dark red. When both of these are present, they are never-failing signs of a supervening febrile attack, and the change in the urine nearly always occurs.

"In those persons who begin their residence in the country at the commencement of winter, the signs of approaching disease in the subsequent sickly season may not be quite so well marked as has been described, but they are nevertheless sufficiently prominent."

After a person has passed through one attack of fever in this climate, there seems to be a great change in the system. The florid complexion brought from the north is succeeded by a permanent paleness, and there is torpor of the extreme vessels, denoted by the cessation of the profuse perspiration, and the difficulty of procuring even a natural secretion from the skin. There is torpidity of the liver; a weakened state of all the organs concerned in the process of digestion and muscular debility. The system is extremely susceptible to atmospheric vicissitudes, and the influence of diminished temperature, so that a slight change in this respect is sensibly felt, the cold of the mild Florida winters affecting one quite as unpleasantly as the severe winters of the north the more robust inhabitants of those regions, and warm clothing is just as necessary. It is a common remark amongst northerners that they suffer as much from cold in Florida as at home. The winters, moreover, are too short for the system to recover its energies; and exposure to the noxious agents of the climate during the long summers, and it may be, to repeated attacks of fever, are too debilitating in their effects to admit of restoration in the brief period allotted by nature to a Florida winter. At the beginning of another hot season, the same causes are again in operation, diminishing still farther the vital energies; and disease, produced by malaria, always liable to recur, will partake of the adynamic character to a still greater degree than before. Thus, the difference between the fevers of newly-arrived recruits and those of old soldiers who had served two or three years in the country, was obvious.

Atmospheric vicissitudes constitute most frequently the *immediately exciting* cause of febrile attacks, as well as of diarrhœa and dysentery. A resident of Florida, debilitated by exposure to malaria and continued moist heat, is far more sensitive to slight changes of temperature than an inhabitant of the north. The perspiration and biliary secretion being in excess during the intense heat of the day, are the more liable to be checked by the damp chills of the night, for it is not uncommon for a thick blanket to be required for covering in the course of a single night in summer, although the preceding day may have been exceedingly warm. This is a consequence of the excessive moisture of the air, and not to sudden or great changes of temperature, for the climate of Florida is more equable than any other portion of the territory of the U. States, excepting, perhaps, the western portion of Oregon.

There is a cold land-wind from the N. W. which prevails frequently during the autumn, though sometimes also in the spring of the year, which is considered by Dr. Porter as one of the immediate exciting causes of disease, and also a source of aggravation for that already existing. This was remarked during the fall of 1839, when the yellow fever prevailed as an epidemic at St. Augustine and Tampa Bay; and at the same time bilious remittent and congestive fevers were much more severe in many parts of the territory than before its occurrence. At Ft. King, also, in April, 1841, fever of a very high grade broke out during the prevalence of this wind, and in the month of October, of the same year, the yellow fever at St. Augustine was much more malignant and fatal whilst it prevailed.

It has been remarked that all the various forms of miasmatic disease, which occur in Florida, exhibit certain symptoms in common. That the identity of their cause is manifested in the different forms of disease to which it gives origin, is confirmed by the fact that one remedy exerts a curative influence over all. Remittents and intermittents are so nearly alike in all points, and run into each other so readily, that they may be viewed as the same disease. Congestive fever in some cases is an irregular remittent—in others an intermittent of one paroxysm. When dysentery is accompanied by fever—that fever always assumes the remittent type, and simple diarrhœa is in most cases the result of the action of the miasmatic poison upon the nervous centres, which preside over the functions of digestion and assimilation. If, then, we possess a remedy which controls all these diseases, the inference is fair that they arise from a similar cause; and moreover, that this remedy is capable of neutralizing this source of morbid action, and, in a greater or less degree, all the forms of disease of which it is the origin. That we do possess this remedy in the sulphate of quinine would seem probable from the experience of Dr. Porter.

Before entering upon a description of the various forms of disease, in which the beneficial effects of large doses of quinine were first observed, it would be well to show the estimation in which Dr. Porter holds the various remedies ordinarily employed in the treatment of southern fevers. And first of *venesection.* This was found universally and decidedly injurious, except in robust recruits recently arrived from the north, who were not yet influenced by the climate—and in these it was *rarely* required, and *never* in a second attack of disease in the territory. The strongest and stoutest subjects showed so little vital force and tonicity of fibre, so little recuperative energy that general bleeding,—however much it might seem to be indicated in the ordinary mode of practice, and however greatly it might temporarily relieve prominent local symptoms—was invariably followed, sooner or later, by their return with increased severity, by increased adynamia, and protracted and doubtful convalescence.

Local bleeding, on the contrary, was very generally attended with benefit.

Emetics were not much used; the gastric irritation present in nearly all cases of fever, was of too intense a character to warrant their employment, and prostration was too easily induced.

Cathartics were always beneficial. Soldiers, as a general rule, bear purgative medicines better than any other class of persons; but in the diseases of this country every age and sex required them at the commencement, on account of the constipation, and also to correct the action of the liver, and to remove irritating secretions from the alimentary canal. They were also useful in equalizing the circulation by relieving the local congestion always in some degree present. When the stomach was quiet, 8 or 10 grains of calomel, followed by ol. ricini, was the best medicine of this class, acting efficiently without producing irritation. With an irritable stomach 15 or 20 grains of calomel, *per se*, was the only article that could be retained, assisted in the course of a few hours, by laxative enemata. After one cathartic at the outset of the disease, mild ones, or laxatives only, were in general required.

Diaphoretics and *alteratives* were often necessary before the administration of quinine, especially in the cases of robust recruits. In these cases, when the tongue remained dry, the skin hot, and when these remained, pain of the head, or a full pulse after the operation of a cathartic, the quinine was inadmissible, and calomel combined with pulvis antimonialis, or acetate of ammonia with sp. ætheris nitrici repeated frequently, were useful remedies. In some cases the acetate of ammonia proved repulsive to the stomach, a small dose producing emesis more promptly than a full dose of any emetic. In giving calomel, care was taken not to continue it too long, for ptyalism in this climate was always hurtful. Ipecacuanha, in small doses, as often as the stomach could bear them, was in many cases advantageous. Nitrate of potash was rarely beneficial. The other neutral salts, effervescing mixtures, &c., were frequently useful in allaying gastric irritability. So soon as the tongue became moist it was generally best to commence the quinine in decided doses,—if necessary, combined with calomel, pulv. antimonialis, ipecac., capsicum, &c. &c.

Opium and its preparations were valuable medicines. Sulphate of morphia, in the dose of $\frac{1}{4}$ or $\frac{1}{6}$ gr. at night, rarely failed in allaying the nervous irritation which is almost always present in these miasmatic diseases, especially after a severe paroxysm of fever, followed by profuse sweating. It was combined frequently with quinine, calomel, antimonial powder, or ipecac.; opium was used with great caution in certain cases of fever attended with great congestion, livid lips, &c.

Capsicum is considered by Dr. P. a most useful adjuvant to quinine in the treatment of Florida fevers, and second only to it in power. It seems to stimulate the stomach, in fever, to digest and assimilate the quinine, and has produced excellent effects in diarrhœa and dysentery in combination with quinine, opium, &c. &c.

Diet, &c. Mild mucilaginous drinks, such as gum Arabic, barley water, and thin arrow root were freely used, in fever cases, to afford nourishment and allay thirst; sweetened cream of tartar solution was also a good drink; but the best article of the kind was tamarind water, which rarely disagreed with the stomach, and was always grateful to the patient. On the contrary, the acid of the lime and lemon, as well as tartaric acid, often produced pain and gastric uneasiness; and if, after taking them, the contents of the stomach should be rejected, they were frequently so very acid as almost to excoriate the fauces. It was a common practice, after a paroxysm of fever had fairly subsided, when the patient had been dried of the profuse sweat, which had drenched him from head to foot, his shirt changed, &c., to give a bowl of beef tea, or light chicken soup, thus supporting the system and preparing it to encounter another paroxysm of fever,—unless by the immediate use of quinine, capsicum, &c., this could be prevented. By the timely administration of a little nourishment, many a patient has been saved. A strict, long-continued, antiphlogistic regimen, in these Florida fevers, never failed to produce injurious effects.

Dr. Porter's practical acquaintance with the diseases of Florida commenced at Port White—an unhealthy post situated on a branch of the Suwanna river,—in the summer of 1839, immediately on his arrival in the territory. This post was garrisoned by troops debilitated by long service in the climate, and early in the season they had suffered much from sickness. Depletion was badly borne by them. Local bleeding, moderate mercurial cathartics, sinapisms, and an early resort to quinine and capsicum, was found safe and sure practice. The cases which recurred in the chilly weather of October and November were more severe than those of the previous months, and yet one death from congestive fever, and another from cholera infantum, were the only fatal cases—a result which is ascribed "almost entirely to the use of quinine in *pretty large doses* (8 and 10 grs.) early in the disease."

The summer of 1839 was very unhealthy throughout the country. Fevers of a high grade prevailed extensively in the interior, and the yellow fever on the sea-board.

The year following, 1840, was remarkable for the duration of its rainy season. Nearly 90 inches of rain fell at Tampa Bay during the year. At the beginning of winter the whole country was saturated, and the low grounds overflowed. The southern portion of the peninsula was so completely under water in the month of February, 1841, that an expedition in the direction of the Kissimmee was rendered abortive, and compelled to return, having effected nothing. The summer of 1840 was, therefore, comparatively healthy, and there was no such sweeping epidemics as in the previous hot season; yet very generally sickness prevailed amongst the troops in the interior. Dr. Porter was stationed during this summer at Tampa Bay, on the western coast of the peninsula, a post which served as a depot for the sick of the regiment on duty in Middle Florida (1st and 6th infantry). Here, in the latter part of the season, fever cases were very numerous, and diarrhœa and dysentery particularly troublesome and intractable. For the latter, combinations of opium, calomel, &c., with quinine and capsicum, were found most useful. As the idea has obtained currency that these bowel affections might have been caused, or aggravated by the liberal use of quinine, it is remarked, at this time, when they were so obstinate, and universally prevalent amongst the troops who had been lying amidst the malaria of the Suwannee, that large doses of quinine had not been employed in the treatment of the fevers which had been so rife in that encampment; nor did the use of quinine afterwards, at Tampa, appear to aggravate them; on the contrary, it was found exceedingly beneficial.

The whole winter and spring succeeding the rains of 1840 were uncommonly dry; and the month of March and the early part of April were also exceedingly hot, causing rapid evaporation from the earth's surface, and a corresponding generation of malaria. This will account in a great measure for the severe and very general sickness which prevailed throughout the peninsula during the following summer.

Fever broke out at Fort King, in the interior, where Dr. Porter was stationed, about the 20th of April, and from this period there was no cessation of sickness until the frosts of autumn. For the first few days after the epidemic appeared, it was common for eight or ten of the men to be taken on the *sick report* daily, and, in a short time, the whole command, consisting of four companies of the 2d infantry, were entirely prostrated. Before the end of June almost every man, woman, and child at the post had suffered from fever, and many of them from *two* or *three* attacks. The ostensible exciting cause of this epidemic was a sudden change of weather. No unusual sickness occurred until after the 21st of April. On the morning of that day there was a hard rain, with a tremendous storm of hail, thunder and lightning, followed by cold weather. The nights, mornings, and evenings were severely cold from this time till the end of the month; flannels were resumed, great coats were necessary at night, and good fires were as comfortable as they ever were in the coldest month of winter, although the thermometer had been as high as 89° in March, and 92° in April.

At the commencement of the epidemic the cases were generally severe, particularly among the recruits, a number of whom had arrived from the New York depot late in the autumn previous; and almost every one of these men was attacked in the course of a few days. In these men, who had previously enjoyed good health, the fever, in many cases, nearly approached the continued type—the remissions being incomplete and often very indistinct. There was considerable arterial action; skin dry, and hot; tongue coated, and frequently becoming brown,—or dry, red, and glazed; great thirst; frequently tenderness of the epigastrium; pain of the head, and lumbar region. Some of the cases were attended with stupor or delirium at night; and the majority showed decided symptoms of gastric irritation. General bleeding in these cases was not so necessary as it would have been in similar cases at the north, though having been exposed but for a short time to the morbific influence of the climate, they were still in a very different condition from the old soldiers who had been two or three years in the country; and the success without this measure was fully equal to what could have been anticipated, for, out of 270 fever patients taken sick in April and May, there was but one death. But these recruits did not bear quinine like the old soldiers of the Florida army, or as these same patients did a few weeks afterwards. Simple remittent, in those who had undergone repeated attacks of the disease, often made its appearance with a sudden chill, and after a short time ran into the hot stage, finally terminating in profuse sweat. Sometimes there was little or no cold stage, the patient at once finding the hot stage upon him; and frequently the sweating stage amounted only to a partial perspiration. In all these cases there was considerable gastric irritability, which frequently subsided as the fever abated. A full dose of calomel was generally given as soon as it could be retained by the stomach, and its operation was assisted by enemata —which also allayed the gastric irritability. As soon as the medicine had operated, 10 or 15 grains of quinine were given, and 5 or 10 grains more, according to the urgency of the case, in four or five hours,—the dose to be repeated at such intervals as were deemed advisable. The quinine was given alone or with infusion of capsicum, and in some cases the capsicum was given alone every hour or two between the doses of quinine.

The gastric irritation, which is so prominent a symptom in these fevers, amounted almost to inflammation amongst the recruits; in many cases the tongue was dry and glazed, in others it was red at the edges with enlarged and reddened papillæ, with frequent retching and much tenderness and uneasiness at the epigastrium. In some cases the tongue appeared to part with a thin coat of its own substance when the brown dry fur was thrown off, remaining dry, red, and glazed, and becoming more moist, and less red, as the disease yielded. In a few instances, on becoming cleared of the thick brown coat, which usually appeared in the earlier stages of the disease, the appearance of the tongue resembled a bit of bullock's liver—and these were not only the worst and most dangerous cases, but their recovery was always tedious.

Large draughts of warm chamomile tea sometimes calmed the stomach very effectually; but free cupping to the epigastrium, premised by a large sinapism, and followed by an emollient cataplasm, and later by blisters, was generally required: this treatment was greatly assisted by minute doses of calomel, and enemata of salt and water. In a few of these cases, however, the calomel seemed to exasperate the gastric symptoms, increasing the tenderness at the epigastrium, and dryness of the tongue; these, for the most part bad cases, and attended with torpor of the stomach, were most successfully treated by ipecacuanha in divided doses. It is a remarkable fact, however, that the very best remedy for excessive irritability of stomach was often a full dose (15 or 20 grains) of quinine with capsicum.

Gastric symptoms in old soldiers, on the contrary, were much less intense; the tongue being frequently neither red nor coated, and sometimes perfectly healthy. In them it was apparently caused by direct loss of tone in the stomach, as stimulants were almost invariably successful in procuring relief—and the best stimulant of all was the combination of capsicum and quinine. "I have often known," says Dr. P., "a dose of 15 or 20 grs. of quinine in solution, with an ounce of strong infusion of capsicum, to allay this kind of gastric disturbance so as to enable the stomach to bear a large dose of calomel without difficulty. There was this advantage in the use of this medicine: if it were not retained, no harm resulted from the trial, for the patient might as well vomit up this mixture as any other, and better than to be tormented with violent retching without bringing up anything whatever."

It must be recollected that *ice*, that most useful *medicine* in the gastric irritability of fever, was not to be obtained at Fort King. When the quinine and capsicum were rejected, an ounce of strong infusion of capsicum, alone, would frequently remain upon the stomach, and after a few doses of this, a full dose of quinine would generally be retained, and could afterwards be retained as often as necessary. If the capsicum was rejected, resort was immediately had to small doses of calomel, &c., always administering the quinine as soon as practicable—which never failed when its effects could be procured. When there were no signs of mercurialization, the small doses of calomel were often continued in combination with the quinine.

In those cases where the febrile heat rose rapidly to a state of great intensity, accompanied by great thirst, great pain of the head and lumbar region, and anxiety and distressing sense of weight at the præcordia, advantage was taken of the first remission, however slight, to prevent a second paroxysm, which was apt to be more violent than the first, and often dangerous. Free cupping to the epigastrium and whole length of the spine, with sinapisms and stimulating pediluvia, were immediately resorted to, and a large dose of calomel was given, followed by ol. ricini, mild purgatives or enemata, and as soon as the bowels had been freely moved, 15 or 20 grs. of quinine with capsicum were administered. When there was considerable tendency to remission, and the medicine had not operated, quinine was given, with cathartic enemata. But when there was great determination to the head, amounting to congestion, indicated more by stupor or somnolency, than by pain of the head alone, it was advisable to procure free alvine evacuations before administering the quinine. When the forehead was hot and dry, cold water was freely applied.

When the brain was the organ most implicated in the disease, thorough and repeated cupping from the forehead and temples, and more particularly from the cervical spine, was important. Mustard and capsicum pediluvia; full doses of calomel, with senna and salts, and afterwards divided doses of calomel, ipecac. and pulv. antim.; blisters from the occiput to the first dorsal vertebra, and, later in the disease, to the limbs and extremities, were freely used. So soon as the pulse had softened, and the tongue inclined to become moist, particularly if the gums gave evidence of the mercurial influence, quinine was commenced, and in decided doses.

There were some cases with intense fever, violent cephalalgia, uneasiness of the right hypochondrium, pain in the epigastrium, sometimes delirium at night; great thirst, excessive irritability of stomach; a clean tongue at first, afterwards covered with a yellowish slime, and finally turning to a dark-brown colour; yellow tinge of the skin and tunica albuginea, and great constipation. In these cases, which were evidently complicated with great derangement of the stomach and liver, even if there was not the slightest tendency to remission, or perceptible mercurial influence, if the patient was even growing worse, with biting heat of the body, and cold extremities, great præcordial anxiety, and very frequent pulse; whether there was thirst or otherwise; whether the irritability of stomach had subsided or not; even if there were decided dryness of the tongue, and headache, the administration of quinine was no longer delayed. Twenty grains were given for the first dose, and repeated as often as the case demanded; under its use the stomach became calm, the tongue moist, and the skin regained its equability of temperature.

In an official report for June, 1841, Dr. P. uses the following language:

"In cases of fever where the secretions are somewhat corrected, and the bowels moved, but there remains a warm, dry skin, giving a kind of prickly sensation (*calor mordax*) to the fingers, with a frequent pulse, thirst, and jactitation, large doses of quinine (10, 15 and 20 grs.) must be resorted to without delay. If the tongue be dry, calomel may be given at the same time; but the quinine alone will frequently produce moisture on the tongue, and almost always on the skin,—a slower, softer and better pulse,—and almost immediate convalescence in the patient. Small doses of quinine, in these cases, are not to be relied upon; they are frequently injurious,—producing more thirst, pain of the head, and dryness of the tongue, and exasperating the febrile excitement."

In describing the aggravated forms of remittent fever which occur in the paludal districts of hot climates, Dr. Eberle (Pract. Med., vol. i, p. 130), gives a very good idea of the fevers of Florida. After enumerating the various symptoms in the order of their occurrence, he concludes: "In this way the paroxysms continue to recur, until either a salutary crisis or death takes place—one or the other of which not unfrequently occurs in the third paroxysm."

The termination described by Dr. Eberle no doubt follows the ordinary treatment in such cases, but it was rarely met with in Florida. Here the first and most important indication was to secure a remission, and however slight this might be, advantage was taken of it to administer 20 or 25 grs. of quinine; if this was retained the dose was repeated in a few hours, in which time the case put on a different aspect, and convalescence was immediate and invariable. If there was time to secure the action of a mercurial cathartic it was well, but in urgent cases this was not regarded, as it was absolutely necessary to prevent the access of another paroxysm, and nothing but a large dose of quinine would effect this object with certainty.

This then was the essential difference in treatment between that recommended by Dr. Eberle and the practice in Florida; instead of endeavouring to procure a decided remission of the disease by the ordinary means of cathartics, mercurials and diaphoretics, with the view of exhibiting quinine in small doses, *when it could be borne*, as a *tonic* of doubtful, peculiar, and somewhat mysterious power, this remedy was given in ten times the ordinary dose, early in the disease, and in urgent cases without waiting for a remission, as *the certain antidote* to the miasmatic poison—the stomach was forced to receive it by means of capsicum or revulsives, and the result was always such as to justify the practice. The termination by *crisis* was created, rather than awaited, and the alternative death rarely occurred when there was sufficient vitality remaining to react under the influence of a full dose of quinine.

During this very unhealthy season whilst remittent fevers were so universally prevalent, it might be well supposed that intermittents, in every variety, were neither "few nor far between." *Tertians* were, in general, easily broken up, there being but little danger, under proper treatment, of their running into the remittent form. The bowels were regulated, and there was, in most cases, little necessity for medicine until just before the expected paroxysm. If this were anticipated at 10 o'clock, A. M., for example, 20 grains of quinine would be ordered at reveille, (sunrise,) and at 8 o'clock A. M., 10 grains more in combination with capsicum, or tinct. opii, if required; in the vast majority of cases this alone was sufficient to stop the expected paroxysm, and to break up the disease.

Quotidians were extremely liable to assume a remittent form after the first paroxysm, and consequently the treatment was commenced early, in order to cut the disease short at its outset. Thus, during the first paroxysm, as soon as the nausea subsided, the bowels were freely moved, and as soon as the intermission appeared, 20 grains of quinine were given at once, and the effect was kept up by a repetition of the dose until after the time had passed for a return of the paroxysm.

In patients debilitated by frequent attacks of fever, a few grains of *piperine*, in combination with the quinine, was useful, though it was not found superior to the *capsicum;* and, after the paroxysms were arrested, it was often usefully combined with some tonic remedy. Among the tonics employed after the quinine had produced its effect, the cinchona in substance, Huxham's tincture, the tincture of the sesquichloride of iron, and other bitters, were used with decided benefit. A very good tonic was prepared from the rind of the bitter orange and the bark of the Prunus Virginianus—both indigenous productions, in combination with gentian, columba, quassia and serpentaria. An infusion was made of these ingredients, and a sufficient quantity of brandy added to prevent fermentation. A wineglassful of this preparation three or four times a day, after the fever was broken, was found to produce an excellent effect, in giving tone to the system, and allaying the nervous irritability so conspicuous in all cases of continued malarial disease.

Dr. Porter closes the medical history of the summer of 1841, at Fort King, by the reports of cases which follow. "My notes," he says, "were taken at the bedside of the sick, and, if they possess no other merit, are strictly correct. I have often since regretted that I had not recorded notes of more cases, especially at an earlier period of my Florida service; but time could not always be spared, when suffering myself from disease, the hospitals were overflowing with sick, and there was no leisure by day or night for rest of body, or relaxation of mind."

"Case I.—Private Bigelow, 8th infantry, was admitted into Hospital, Fort King, June 21st, 1841. He had recently been on a march between Tampa Bay and Fort King, and was well on his arrival. His case being regarded as one of common remittent fever, at this time very prevalent, and my time being wholly occupied, no notes were taken at the commencement, but the general plan of treatment resembled that employed in similar cases. From the prescription book of the hospital it appears that he took a mercurial cathartic when first admitted, and that sinapisms and cups were applied to the epigastrium, and sp. ætheris nit., liq. ammon. acet., and soda powders given internally, with tamarind water, mucilage, arrow root, &c., for diet.

"On the 23d, quinine was attempted (in doses of gr. ij—iij), combined with pulv. antimonialis, but it produced headache, thirst and restlessness, and was discontinued.

"From this date to the 27th the treatment consisted of diaphoretics with small doses of calomel and occasional cathartics, with such other remedies as the case seemed to require. The use of quinine (gr. ij every second hour), was again attempted on the 25th, but was necessarily abandoned. On the 26th, it was noticed that the mouth was slightly affected by the calomel.

"*June 27th.*—The condition of the patient is as follows: mouth sore from the calomel; soreness principally confined to the palate and roof of the mouth, from which there had been hemorrhage during the previous night; pulse frequent and irritated; headache; thirst; skin moderately hot and dry; tongue not much coated. ℞.—Quiniæ sulphat. gr. ij secundâ quâque horâ c ℥ss, inf. capsici.

"Acetate of ammonia was directed in the interval, but it produced nausea, and was replaced by sp. ætheris nit. Gargle for the mouth. Light chicken tea and arrow root for diet.

"*Retreat.* 7 P. M.—Heat and dryness of skin increased; pulse more frequent; headache; thirst, and great restlessness. There had been hemorrhage from the mouth to the extent of a pint (as was judged), of dark-coloured blood, and the pillows and sheets were smeared with it, as well as the lips, face, hands and shirt of the patient, which could not be kept clean. There was considerable nausea, caused most probably by the quantity of blood which had been swallowed during the day. Gargles of borax, alum, and oak-bark had been used for the hemorrhage, without the least benefit. ℞.—Quiniæ sulphat. ℈j, statim sumend.

"8 P. M.—Quinine has been retained; headache diminished, and restlessness also; pulse less frequent; slight moisture on forehead.

"*Tattoo.* (9 P. M.)—Condition the same; slight general perspiration. R.—Tr. opii gtt. lxxx.

"This was given on account of the restlessness which still continued in some degree, and for the hemorrhage and ptyalism. Half the dose was repeated at 10 o'clock, P. M.

"*June* 28*th.* 1 A. M.—R.—Quiniæ sulph. ℈ss.

"*Reveille.* (5 A. M.)—Patient rather better; has slept since 1 o'clock; no farther hemorrhage, and complains very little of soreness of mouth.

"7 A. M.—R.—Quiniæ sulph. ℈ss.

"10½ A. M.—R.—Tr. opii ʒj.

"2 P. M.—Is decidedly better and may be considered out of danger. Hemorrhage has ceased entirely, and mouth (according to the patient's statement), perfectly well; no headache; pulse regular and less frequent; no thirst, and a little appetite. The bedding and shirt of the patient had been changed, face and hands kept clean without difficulty, and in every respect a material change for the better had taken place. R.—Quiniæ sulph. gr. v., to be followed by a bowl of chicken tea.

"*Tattoo.* (9 P. M.)—Symptoms continued favourable. R.—Tr. opii gtt. l. Repeat quinine (gr. v) at 9, and 3 o'clock, A. M.

"*June* 29*th.*—Patient is decidedly convalescent. Ordered cathartic enema, and 5 grs. of quinine at 8, 12 and 4 o'clock.

"*Tattoo.* (9 P. M.)—R.—Morphiæ sulph. gr. one-sixth. Continue quinine (gr. v) at 9 and 3 o'clock during the night.

"It is unnecessary to follow the treatment further; the quinine was replaced by tonics, and mild laxatives were given as required. On the 2d July he was sufficiently recovered to be placed on half diet, and a few days afterwards was allowed to join his regiment.

"A few remarks will be made in relation to the treatment of this case. The patient, on the 23d July, was getting decidedly worse; all the remedies deemed appropriate had been continued for some time, and it was evident that something more must be done. At this time the quinine was given in the hope that it would be tolerated, but it produced headache, increased thirst, and restlessness, and was necessarily discontinued. This effect of the quinine was undoubtedly owing to its frequent repetition in doses of two and three grains, which stimulated the system in such a manner as to add to the disease. Had 20 grains been administered at this time, for the first dose, followed in five or six hours by 10 grains more, the patient would, it is confidently believed, have borne the medicine as well as he did afterwards on the evening of the 27th. It is true the defective notes of the case do not show this, but my own recollection enables me to make the assertion as confidently as anything not absolutely certain can be affirmed. Had this been done, another advantage would have been gained, the ptyalism would have been avoided, which, though not very severe, debilitated the patient as well from the hemorrhage, as from the mercurial influence on the system.

"Again, on the 25th, had large doses of quinine been resorted to instead of the small ones, they would, beyond a doubt, have put a stop to the disease. But, as if to contrast the futility of the small doses with the good effect of the large ones, two grain doses were attempted again on the 27th, the patient during the whole day getting worse, and being in a much more unfavourable condition at the close of the day than in the morning, when they were commenced, and the effect of the full dose of 20 grains at sunset of the 27th, when the patient was actually in a hazardous situation, showed the benefit of this practice, and how utterly useless small doses were in serious cases.

"The large dose of laudanum on the same evening was intended not only to allay the nervous agitation, but to check the hemorrhage resulting from the ptyalism, and the ptyalism itself. Its good effect was manifest in the speedy arrest of both hemorrhage and ptyalism in the course of a few hours. Perhaps the quinine had some influence in this result, but I am disposed to think that the opium was the principal agent.

"It is due to Surgeon Harney (U. S. A.) to state that so far as the writer is concerned, the practice of giving large doses of opium in ptyalism originated with him; and so large a dose would not have been exhibited in the present case had it not been for his precept and example. His practice for the last 20 or 30 years, as stated by himself, has been to give large doses of opium when there is a prospect of a severe salivation, at the outset, in order to prevent ulceration, and to cut short the disease. Taken in season, before ulceration has commenced, I have no doubt this can be done. Its employment in the present case was certainly attended by the happiest effects. Such doses are to be given as will decidedly narcotize and quiet the patient, otherwise the remedy is injurious. This was Surgeon Harney's practice, and I will here take the liberty of remarking farther, that the members of the medical department and the sick of the army owe him much for the determined manner in which he advised, *most strongly*, the use of quinine in *large doses*, in the fevers of Florida."

"Case II.—Ann Gallagher, the wife of a soldier of the 2d infantry, was first seen on the evening of the 26th June, 1841. This woman had a severe attack of remittent fever in May last, and since that time has had several returns of intermittent. She has a child four or five years old, born since her recovery from the remittent. Complains to-day of slight chills, and fever since morning; skin warm; thirst; bowels constipated. R.—Massæ hydrarg. gr. x, Pulv. aloe gr. ij.—M.

"*27th.* 7 A. M.—Medicine has operated. Skin dry; pulse frequent and rather dense; some headache and slight thirst. R.—Quiniæ sulph. gr. v.

"9 A. M.—Skin moist; headache less; pulse soft, and much slower. Quinine repeated in same dose.

"At 1 P. M., the patient experienced a regular paroxysm of fever preceded by a hard chill and followed by a profuse perspiration.

"7 P. M.—Perspiration profuse; severe headache and frequent pulse. Cups were ordered to be freely applied to nape of neck; tamarind water for drink.

"28*th. Reveille.* (5 A. M.)—Patient much worse. Severe headache, especially of the forehead and over the right orbit; pulse frequent and tense; skin hot and dry; thirst; tongue clean, with slightly reddened edges. Ordered sinapisms to nape of neck.

"7 A. M.—Much the same. R.—Quiniæ sulph. gr. xv. Statim sumend.

"9 A. M.—Skin moist; pulse much slower, and softer; headache nearly gone. R.—Quiniæ sulph. gr. x.

"*Tattoo.* (9 P. M.)—Has had no return of fever. Pulse soft and regular; pain of the head entirely gone, and succeeded by a sensation of *fullness* and a slight deafness—the effect of the quinine. R.—Ol. ricini ℥ss.

"29*th. Reveille.*—Medicine has operated. Patient is decidedly convalescent. To prevent a recurrence of the fever gr. x of quinine were ordered at 7 o'clock, A. M., and gr. iv at 9 o'clock, A. M.

"*Retreat,* (sunset.)—Entirely well with the exception of debility."

"*Remarks.*—The quinine should have been given on the 27th in the same quantity which was taken on the 28th. If this course had been pursued there would have been no paroxysm of fever on that day, and the risk of a confirmed remittent fever would have been obviated."

"CASE III.—Fort King, June 28th, 1841. Private Balch, 2d infantry, reported himself sick about 3 o'clock, P. M. Says he felt quite unwell at the same hour yesterday. Has headache, and some dizziness,—walking with an unsteady gait; pulse frequent; skin dry and hot; thirst; tongue clean; bowels regular. Having been just before relieved from duty in the sun, it was not certain that many of his symptoms, particularly the dizziness, were produced by fever, and he was therefore sent to the hospital without a prescription.

"*Tattoo.* (9 P. M.)—Rather more comfortable; pulse not so frequent; skin still dry. R.—Ol. ricini ℥j.

"29th, (8 A. M.)—Has had some sleep during the night; but the pulse is still frequent, the skin dry, and there is considerable headache. Medicine has operated. R.—Quinine sulph. gr. xv.

"12 M.—Skin moist; pulse slow and soft; no pain of head; patient better in every respect. R.—Quiniæ sulph. gr. v.

"*Retreat,* (sunset.)—No change; quiet and comfortable.

"*Tattoo.* (9 P. M.)—Same; no return of fever. R.—Quiniæ sulph. gr. viij.

"30th.—Rested well during the night, and is decidedly convalescent. R.—Quiniæ sulph. gr. v., ter in die."

"CASE IV.—Fort King, July 15th, 1841. Lieutenant D., 2d infantry, complained about 10 o'clock A. M., with frequent pulse, extreme heat of forehead and skin, and much thirst. Had an attack of intermittent fever during the previous month. R.—Hydrarg. chlor. mitis gr. x. To be followed by a Seidlitz powder at bed-time.

"16th.—Medicine has operated freely.

"The fever increased at about 10 A. M. 1 P. M.—Pulse frequent; skin hot and dry; forehead extremely hot; pain of the head; thirst.

"3 P. M.—Slight attempt at perspiration, which soon subsided, and at retreat, the symptoms were the same as at 1 o'clock P. M., with the addition of great restlessness and uneasiness. R.—Hydrarg. chlor. mitis gr. j., Pulv. antimonialis gr. ij, Morphiæ sulph. gr. $\frac{1}{6}$. To be continued at intervals during the night.

"17th, (7 A. M.)—Obtained some sleep during the night; skin still warm and rather dry; pulse frequent; thirst less than heretofore: less pain of the head; tongue slightly coated and moist; considerable restlessness. R.—Quiniæ sulph. gr. xv.

"9 A. M.—Forehead, wrists, and lower extremities moist, and chest and whole body of a natural heat; pulse a little less frequent, and no greater thirst or pain of the head. R.—Quiniæ sulph. gr. x.

"1 P. M.—Skin generally moist; no thirst; pulse less frequent; no pain of the head, but slight disturbance and deafness from the quinine. No medicine.

"*Retreat.*—Has been in a quiet sleep; disturbance of the head, and deafness entirely gone; skin moist. Took some tea and toast, and expressed himself as feeling much better.

"*Tattoo.* (9 P. M.)—Same. R. Hydr. chlor. mitis gr. j., Pulv. antim. gr. ij, and Morphiæ sulph. gr. $\frac{1}{6}$, a Seidlitz powder at 2 A. M., and 10 grs. of quinine at reveille.

"18th, (8 A. M.)—Has had a good night; pulse quick, not frequent; no pain of the head; no thirst; skin natural. R.—Quiniæ sulph. gr. x.

"*Retreat.* Has passed a comfortable day; head slightly affected by the quinine; skin moist and cool; pulse slow and soft. Is decidedly convalescent. Ordered 5 grs. of quinine at reveille to-morrow, to be repeated at 9 A. M. Continued to convalesce from this date."

"CASE V.—I will here give the notes of my own case. I had been on duty at Fort King since the breaking out of the epidemic in the month of April. In May and June I experienced two or three attacks of intermittent, and in July had a rather severe remittent fever, though of short duration. For some time before the 4th of August I had suffered on every second day with pains of the back, hips, and limbs, darting pains in various parts of the body, sometimes with headache, and always *malaise*, on the alternate days feeling as well as usual. On the 4th of August I was quite indisposed and took 10 grs. of calomel in the evening.

"August 5th. As this was the *well* day I did not consider it necessary to take much medicine, as the calomel had operated; still, before 1 P. M. I took three or four doses of quinine, 2 grs. each, which produced considerable disturbance of the head. Towards evening a nervous headache, particularly severe over the left orbit, became very annoying, which continued until retiring for the night—about 10 P. M. No medicine was taken. I passed a most uncomfortable night, suffering with a severe pain over the whole head, but most severe in the frontal region, with great heat of the forehead; inclination to profound sleep, which was partially disturbed by the intense headache, and aching of the limbs; great heat and dryness of the palms of the hands and soles of the feet; the pulse was full and frequent, and there was slight thirst.

"6th. At reveille (5 A. M.), the pain of the head, and intense heat of the forehead, hands and feet had somewhat abated, (though all continued in a less degree,) nor was the pulse quite so full and frequent as in the night. Regarding this as being, perhaps, a slight tendency to remissions, and fearing that, as the day advanced, the fever would be exasperated, I swallowed, at 5½ A. M., after considerable hesitation, 15 grains of quinine in solution, with ℥ij. inf. of capsicum. This, in about half an hour, produced a slight perspiration on the forehead, and sensibly relieved the pain of the head. At 7 A. M. I took a bowl of hot coffee, which brought out a free and general perspiration. At 8 A. M., 5 grs. of quinine in solution, with ℥j. inf. of capsicum, were taken and nothing more during the day. The skin continued free; the headache abated entirely; the pulse became slow and soft; and the day was passed comfortably in every respect;—so much so that I was enabled to take the foregoing notes of the case during the afternoon.

"*Tattoo.* Still feel well; some appetite. No medicine.

"*7th.* Perfectly well with the exception of some debility. Appetite improving. Took 5 grs. of quinine with capsicum three times to-day to prevent relapse.

"*Remarks.*—Had other remedies been given, or any other plan of treatment been adopted; had I placed my reliance on diaphoretics, alteratives, or even upon small doses of quinine on the morning of the 6th; a sick day, and a confirmed remittent fever, would have undoubtedly followed. The combination of quinine and capsicum in a decided dose produced such an immediate impression upon the nervous system, through the stomach, as to equalize the circulation, and cut short the disease."

Shortly after the attack of sickness described above, Dr. Porter was relieved from duty at Fort King, very much broken down in health, as indeed were all who had remained at that station during the summer, and was ordered to the U. S. Barracks at St. Augustine, where he encountered the yellow fever which prevailed to a fatal extent amongst the troops at that post in the months of October and November of the same year.

Dr. Porter describes the congestive fever, of which disease he met with numerous cases in the course of his Florida service, at considerable length. It was in this disease that the powers of the large doses of quinine were exhibited in the most striking manner. This department of the subject, together with the effects of quinine in yellow fever will, however, be necessarily deferred for the present.

SURGEON-GENERAL'S OFFICE, *Washington, D. C.*, June, 1845.

ART. V.—*Practical Observations on the Radical Treatment of Varicocele.*

By JOHN WATSON, M. D., Surgeon to the New York Hospital.

IN the few remarks which I have to offer on the radical treatment of varicocele, I shall confine myself, for the most part, to the operation first suggested by the late Sir Astley Cooper. I have already alluded to this